

WHAT IS CLAIMED IS:

1. A semiconductor manufacturing apparatus comprising:

an integrated measuring instrument for measuring the form or size of an element to be formed into a wafer;

an etching unit for etching said wafer by making use of plasma generated under reduced pressure;

an ashing unit for ashing said etched wafer;

a wetting unit for wetting said etched wafer;

a drying unit for drying the wafer which has gone through said wetting treatment;

a transport means whereby the wafers introduced into a wafer cassette are transported one by one successively to said integrated measuring instrument and each of said working units; and

a transport chamber in which said integrated measuring instrument, etching unit, ashing unit, wetting unit, drying unit and transport means are connected by a depressurizable transport passage, and which is provided with a wafer cassette inlet for receiving a cassette containing a plural number of sheets of wafer to be etched.

2. The semiconductor manufacturing apparatus according to claim 1 wherein said integrated measuring instrument measures the form or size of the wafer based on the spectrum of the reflected version of light applied to the wafer.

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3. The semiconductor manufacturing apparatus according to claim 1 wherein said integrated measuring instrument estimates the form of the element from the spectral distribution of the reflected version of light applied to the wafer.

4. The semiconductor manufacturing apparatus according to claim 1 wherein said transport means transports the wafers introduced into a wafer cassette one by one continuously to said integrated measuring instrument and each working unit.

5. The semiconductor manufacturing apparatus according to claim 1 wherein after the working process of part of the wafers contained in the cassette has been completed, the remaining wafers in the cassette are transported successively to said integrated measuring instrument and each working unit by said transport means.

6. A semiconductor manufacturing method comprising:

an integrated measuring instrument for measuring the form or size of the element to be formed into a wafer;

an etching means for etching said wafer by making use of plasma generated under reduced pressure;

an ashing means for ashing said etched wafer;

a wetting means for wetting said etched wafer;

a drying means for drying the wafer which has

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gone through said wetting work;

a transport means whereby the wafers introduced into a wafer cassette are transported successively to said integrated measuring instrument and each working unit; and

a transport chamber in which said integrated measuring instrument, etching means, ashing means, wetting means, drying means and transport means are connected by a depressurizable transport passage, and which is provided with a wafer cassette inlet for receiving the cassette containing a plural number of sheets of wafer to be etched,

wherein the wafers contained in said cassette are transported one by one successively to said integrated measuring instrument and each working unit by said transport means and treated.

7. The semiconductor manufacturing method according to claim 6 wherein after part of the wafers contained in a wafer cassette have been finished with the treating process, the remaining wafers in said cassette are transported successively to said integrated measuring instrument and each treating unit by said transport means.

8. The semiconductor manufacturing method according to claim 6 wherein said integrated measuring instrument measures the form or size of the pre-treatment wafers carried into said integrated meas. unit. (metrology) and makes optimum control of the etching means based on said

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measurements.

9. The semiconductor manufacturing method according to claim 6 or 7 wherein said integrated measuring instrument measures the form or size of the post-treatment wafers carried into said metrology, and makes optimal control of the etching means based on said measurements.

10. The semiconductor manufacturing method according to claim 6 or 7 wherein said integrated measuring instrument measures the form or size of the pre- and post-treatment wafers carried into said metrology, and make optimal control of the etching means based on the difference of said measurements.

11. The semiconductor manufacturing method according to claim 6 or 7 wherein said integrated measuring instrument makes judgment on whether to continue or stop the etching work based on the measurements of the form or size of the wafers.

12. The semiconductor manufacturing method according to any one of claims 6 to 8 wherein said transport means transports the wafers to the ashing means antecedently to the wetting means.

13. The semiconductor manufacturing method according to any one of claims 6 to 8 wherein said transport means transports the wafers to the wetting means <sup>before</sup> antecedently to the ashing means.

14. The semiconductor manufacturing method according to claim 7 wherein said integrated measuring

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instrument measures the form or size of part of the  
wafers which have completed the treatments, and make  
optimum control of the etching means based on said  
measurements.

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